

upon the end of the solid chitinous cone, as determined by removing the layer of pigment with dilute potash, and treating the section with acetic acid and then staining with picro-carmin. So far as we can ascertain, no Arthropod eye is so simple as that of *Limulus*. Our observations have been based on a study of the structure of the lobster's eye from preparations of very great beauty and delicacy, kindly made for us by Norman N. Mason, Esq., of Providence, who has also made beautiful sections of the *Limulus*-eye, after treating them in various ways. The question as to the nature of the solid cones we are not yet prepared to settle. Are they crystalline lenses or only analogous organs? Can the horseshoe crab distinguish objects? We doubt if its eyes enable it to more than distinguish between the light and darkness. Since the above remarks were put in type, we have seen Grenacher's great work on the eyes of Arthropoda. He regards the conical chitinous minié-ball-like bodies as corneal lenses. He does not describe the simple eye, which is a close repetition of one of the corneal lenses of the compound eye of the same animal, except that the lens is shorter and with the end much more obtuse.—*American Naturalist*, March 1880.

*Fossil Crawfish from the Tertiaries of Wyoming.*

By A. S. PACKARD, JUN.

Two specimens of fossil crawfish quite well preserved have been kindly lent us for description by Professor Leidy, who received them from the fish-beds of the western border of Wyoming, through Dr. J. Van A. Carter, of Evanston, Wyoming. Of the two specimens the smaller presents a dorsal, and the larger a lateral view, both being slightly distorted by pressure; the length of the smaller from the tip of the rostrum to the end of the telson is 38 millims., and of the larger 53 millims. They do not differ generically from existing species of *Cambarus*, though with some resemblances to *Astacus*; but as the gills are not represented it is not possible to say to which of these two genera the species belongs; still the weight of characters ally it nearest to *Cambarus affinis*, as seen in the long, narrow, pointed rostrum, and the form of the chelæ and the second antennal scales. These scales are also much as in *C. obesus*, var. *latimanus* and *Bartonii*, but rather narrower, the lateral terminal spine being long, slender, acute. The flagella of the second antennæ are of the usual size, extending to the terminal fourth of the abdomen. The distal end of the scape of the first antennæ reaches to near the end of the last joint of the scape of the first pair, the species in this respect being more like *Cambarus* than *Astacus*. The carapace is of the proportions of living species of *Cambarus*. The first pair of legs are rather shorter and stouter than in our living crawfishes, and the chelæ are rather shorter; while the surface of the carapace and legs is much more coarsely tuberculated than in our *Cambari*, and in this respect resembles large specimens of *Astacus fluviatilis* of Europe, though the tubercles are larger.

The abdomen is of the usual proportions, but the surface is more coarsely tubercled; the telson and broad rami of the last pair of feet are spined as in living species of *Cambarus*. It is interesting to observe that this species is most nearly related to *Cambarus affinis*, which, as observed to me by Mr. P. R. Uhler, who kindly gave me some species for comparison, is the more generalized American species of the genus, and probably the oldest one. It would be interesting to know whether this fossil form is actually a *Cambarus* or an *Astacus*, and to ascertain which of these two genera, now restricted, the latter to the Pacific slope of the Sierra Nevada, the former to the Central and Eastern zoogeographical provinces, was the first to obtain a foothold on our continent. There is a probability that the present fossil form is a member of the American genus *Cambarus*. The species may be called, therefore, *Cambarus primævus*.—*American Naturalist*, March 1880.

*On the Occurrence of Tachymenis vivax in Cyprus.*

By Dr. A. GÜNTHER, F.R.S.

Major-General R. Biddulph, C.B., has kindly placed in my hands a snake obtained on the Lapithos road in Cyprus, which proves to be *Tachymenis vivax*, a species not contained in the collection described by me in Proc. Zool. Soc. 1879, p. 741, and, indeed, as far as I can see, new to the fauna of the island. The captor, Capt. Stevenson, informed Gen. Biddulph that the natives call it "Kufi," and believe its bite to be fatal to man; the species, however, is entirely harmless, and evidently owes its bad reputation to its singular resemblance to a viperine snake, and more especially to the viper occurring in the island, *Vipera lebetina*. This is a case of so-called mimicry which would be very far from benefiting the species concerned.

The Cyprian specimen differs from all the other specimens in the British Museum (received from Xanthus, Syria, the Holy Land, and Dalmatia) in having twenty-one longitudinal series of scales, the typical form possessing nineteen only. It does not differ in other respects.

*On Dana's Lysiosquilla inornata.*

*To the Editors of the Annals and Magazine of Natural History.*

GENTLEMEN,—Allow me to state that I think Mr. E. J. Miers is perfectly right in referring (Ann. & Mag. Nat. Hist. ser. 5, vol. v. p. 8) the *Squilla* from La Guayra to Dana's *Lysiosquilla inornata*. When I wrote my letter, published in P. Z. S. 1870, I had no access to Dana's work; but I was afterwards able to compare his description with the specimen in our Museo Nacional; so that another one was given by me, in December 1877, under that name to Mr. William Stürup, Danish Consul-General in this city, who, I believe, sent it to the Museum in Copenhagen.

I am, yours very truly,

A. ERNST.

Caracas, March 18, 1880.